KHOMCHENKO, G.P.; STOYANOVSKAYA, T.N.; VOVCHENKO, G.D.

Reactions of hydrogenation and electrohydrogenation of some organic substances on a ruthenium electrode-catalyst. Zhur. fiz. khim. 38 no.2:434-438 F '64. (MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

KHOMCHENKO, G.P.; TSINTSEVICH, V.M.; VOYCHENKO, G.D.

Catalytic hydrogenation and electrolytic hydrogenation of butynediol and its homologs. Zhur. fiz. khim. 38 no.2:496-500 F '64. (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 26737-66 EWP(k)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6017438 SOURCE CODE: UR/0076/65/039/006/1408/1412

44
B

AUTHOR: Bogdanovskiy, G. A.; Khomchenko, G. P.; Vovchenko, G. D.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Charging curves of metal powders 14

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 6, 1965, 1408-1412

TOPIC TAGS: metal powder, rhodium, ruthenium, hydrogen

ABSTRACT: A method is proposed for plotting the charge curves for metal powders, called the direct contact method. The values of the true surfaces of metal powders, calculated according to the hydrogen region of the charge curves plotted by the direct contact method, are in excellent agreement with values obtained by the BET method. It was established that the amount of electricity required to eliminate adsorbed hydrogen from 1 cm^2 surface of rhodium or ruthenium amounts to $28 \cdot 10^{-5}$ coulombs and is the characteristic value for metals of the platinum group. Orig. art. has: 7 figures. [JPRS]

SUB CODE: 11 / SUBM DATE: 22Feb64 / ORIG REF: 010 / OTH REF: 002

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Card 1/1 CC UDC: 541.13

KRASNIKOVA, L.Ya.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Effect of the reaction products on the catalytic reduction of crotonic and maleic acids on platinum. Vest. Mosk. un. Ser. 2:Khim. 20 no. 5:48-51 S-O '65. (MIRA 18:12)

1. Kafedra obshchey khimii Moskovskogo gosudarstvennogo universiteta. Submitted Dec. 31, 1964.

GRISHINA, T.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Adsorption of some organic substances on a rhodium electrode-catalyst. Vest. Mosk. un. Ser. 2: Khim. 20 no.5:41-43 S-O '65. (MIRA 19:1)

1. Kafedra obshchey khimii Moskovskogo universiteta. Submitted Feb. 15, 1965.

BOGDANOVSKIY, G.A.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Charge curves of powdered metals. Zhur. fiz. khim. 39 no.6:1408-1412 Je '65. (MIRA 18:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Submitted Feb. 22, 1964.

TSINTSEVICH, V.M.; KOMCHENKO, G.P.; VOVCHENKO, G.D.

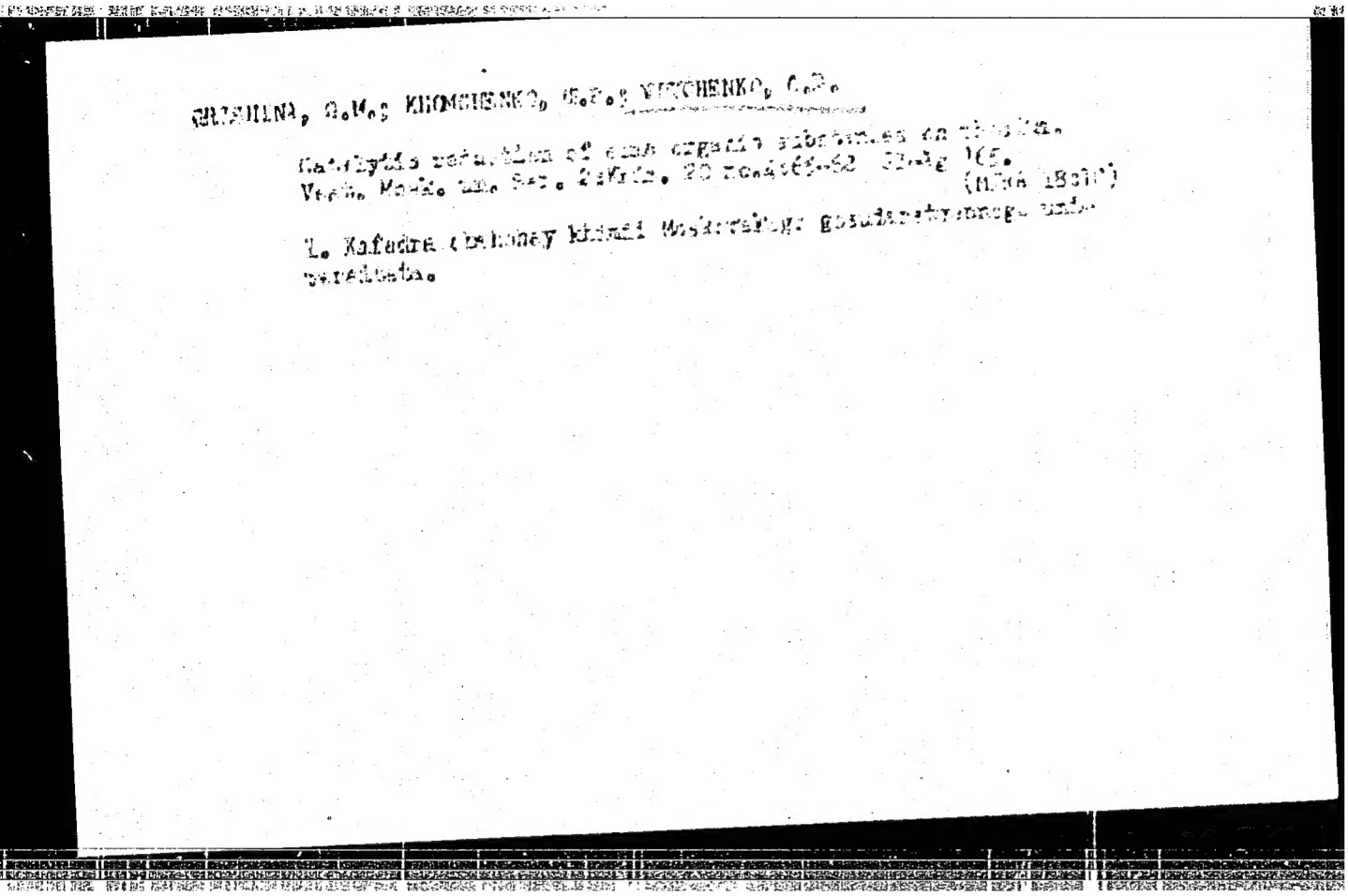
Electrochemical reduction of butyne-1,4-diol on a platinum electrode-catalyst. Elektrokhimiia 1 no.8:928-932 Ag '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

STOYANOVSKAYA, T.[illegible]; [illegible]; VOVCHENKO, G.D.

Effect of arsenic and [illegible]. Vest. Mosk. un. Ser. 2: Khim. 20 no.4:62-64 [illegible] '65. (MIRA 18:10)

1. Kafedra obshchey khimii Moskovskogo gosudarstvennogo universiteta.



PLETYUSHKINA, A.E.; KHOSHCHENKO, G.P.; VOYSIEMKO, G.D.

Hydrogen adsorption on platinum at various temperatures. Vest.Mosk. un.Ser.2:Khim. 20 no.3:59-61 My-Je '65. (MIRA 18:8)

1. Kafedra obshchey khimii Moskovskogo universiteta.

BOGDANOVSKIY, G.A.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Adsorptive capacity of some platinoids toward hydrogen at different pH values. Vest.Mosk.un.Ser.2:Khim. 19 no.4:35-38 Jl-Ag '64.
(MIRA 18:8)

1. Kafedra obshchey khimii Moskovskogo universiteta.

STOYANOVSKAYA, T.N.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Catalytic reduction in an adsorption hydrogen layer of some organic compounds on a ruthenium electrode-catalyst. Vest. Mosk. un. Ser. 2:56-59 Mr-Ap '65. (MIRA 18:7)

1. Kafedra obshchey khimii Moskovskogo universiteta.

KHOMCHENKO, G.P.; UL'KO, N.G.; VOVCHENKO, G.D.

Charging curves of an osmium electrode-catalyst. Part 1. Elektrokhimiia 1 no.6:659-663 Je '65. (MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

STOYANOVSKAYA, F.N.; KUCHENKO, G.P.; VOVCHENKO, G.D.

Electroreduction of some organic substances on a ruthenium electrode-catalyst. Vest.Mosk.un.Ser.2:Khim. 20 no.3:64-66 My-Je '65. (MIRA 18:8)

1. Kafedra obshchey khimii Moskovskogo universiteta.

TSINTSEVICH, V.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Adsorptive capacity and the interaction of butynediol and its homologs with the electrode-catalyst. Zhur. fiz. khim. 38 no.9:2305-2309 S '64. (MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

STOYANOVSKAYA, T.N.; KHOMCHENKO, G.P.; PLETYUSHKINA, A.I.; VOVCHENKO, G.D.

Determination of the true surface of a ruthenium electrode-catalyst. Vest.Mosk.un. Ser.2:Khim. 18 no.6:50-51 N-D '63. (MIRA 17:4)

1. Kafedra obshchey khimii Moskovskogo universiteta.

GRISHINA, T.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Mechanism of electroreduction of some organic substances on rhodium. Part 4. Vest.Mosk.un. Ser.2:Khim. 18 no.6:52-54 N-D '63. (MIRA 17:4)

1. Kafedra obshchey khimii Moskovskogo universiteta.

GRISHINA, T.M.; KHOMCHENKO, G.P.; VOVCHENKO, G.D.

Comparison of the rates of the catalytic reduction and electrolytic reduction of some organic substances on rhodium. Part 3. Vest.Mosk. un. Ser.2: Khim. 18 no.4:55-58 Jl-Ag '63. (MIRA 16:9)

1. Kafedra obshchey khimii Moskovskogo universiteta.
(Catalysis) (Reduction, Electrolytic)
(Electrodes, Rhodium)

VOVCHENKO, O.I.

Excursion to a water pumping station. Fiz.v shkole 15 no.3: 60-63 My-Je '55. (MLRA 8:6)

1. 10-ya shkola (g.Berdsk Novosibirskoy oblasti)
(Water-supply engineering)

VOVCHENKO, G.V.

VOVCHENKO, G.V., kandidat meditsinskikh nauk

Projecting the acetabulum and of the femoral head on the surface of the human body. Ortop.travm.protez., Moskva no.1:89-90 Ja-F '55. (MLRA 8:10)

1. Iz ortopedicheskoy kliniki (zav.-prof. T.M. Stepanov) i kafedry fakul'tetskoy khirurgii (zav.-prof. T. Ye. Gnilorybov) Dnepropetrovskogo meditsinskogo instituta.

(ACETABULUM,
determination on surface of human body)
(RIBS,
determ. of costal head on surface of human body)

VOVCHENKO, I., TURCHAK, M.

Machine-Tractor Stations

At the "Shevchenko" Mts. MTS 12 no. 3, 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1952 Unclassified.

1. VOYCHENKO, I

2. USSR (600)

4. Agriculture

7. Strengthening communal exonomy on the "17th Party Congress" Collective Farm. Dost. sel'khoz. no. 6, 1952

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

VOVCHENKO, Ivan Antonovich; VELICHKIN, Ye.A., inzh., red.; BOBROVA, Ye.N., tekhn.red.

[Repair of track and building machinery] Remont putevykh i stroitel'nykh mashin. Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 370 p. (MIRA 13:7)
(Building machinery--Maintenance and repair)
(Railroads--Track)

VOVCHENKO, I.A.; IVANOV, V.A.; MIN'KO, Ye.M., starshiy inzh.

Vibration sinking of pile foundations in the electrification of railroads. Transp. stroi. 11 no.10:19-21 O '61. (MIRA 14:10)

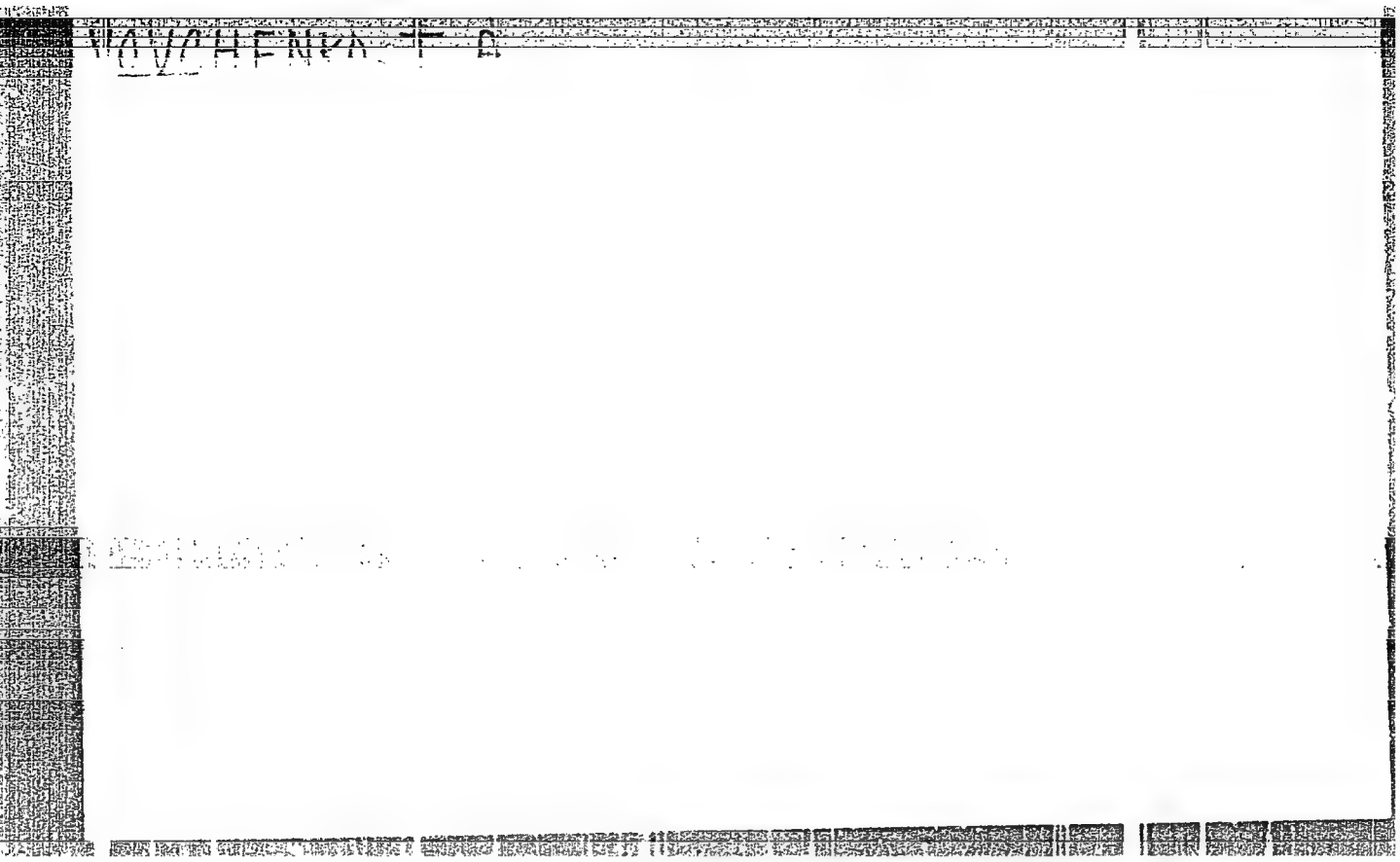
1. Glavnyy mekhanik Glavnogo upravleniya zheleznodorozhnogo stroitel'stva (for Vovchenko). 2. Nachal'nik tresta Yuzhtransstroy (for Ivanov).
(Piling (Civil engineering)) (Railroads--Electrification)

VOVCHENKO, I. A.; ZAYTSEV, Ye. I.

Stamping bottoms using a blasting method. Transp. stroi. 13 no.4:64 Ap '63. (MIRA 16:4)

1. Glavnyy mekhanik Glavnogo upravleniya zheleznodorozhnogo stroitel'stva Povolzh'ya i Yuga (for Vovchenko). 2. Glavnyy inzhener Krasnodarskogo remontno-mekhanicheskogo zavoda (for Zaytsev).

(Water heaters) (Explosives in sheet-metal work)



VOVCHENKO, I.I.

Steadiness of certain cases of the motion of solid bodies with one fixed point for a finite time interval. Trudy KAI no.68: 3-10 '62. (MIRA 16:10)

BR

ACCESSION NR: AT4025520 S/2529/62/000/068/0003/0010

AUTHOR: Vovchenko, I. I.

TITLE: The stability of certain cases of the motion of rigid bodies with one fixed point in a finite time interval

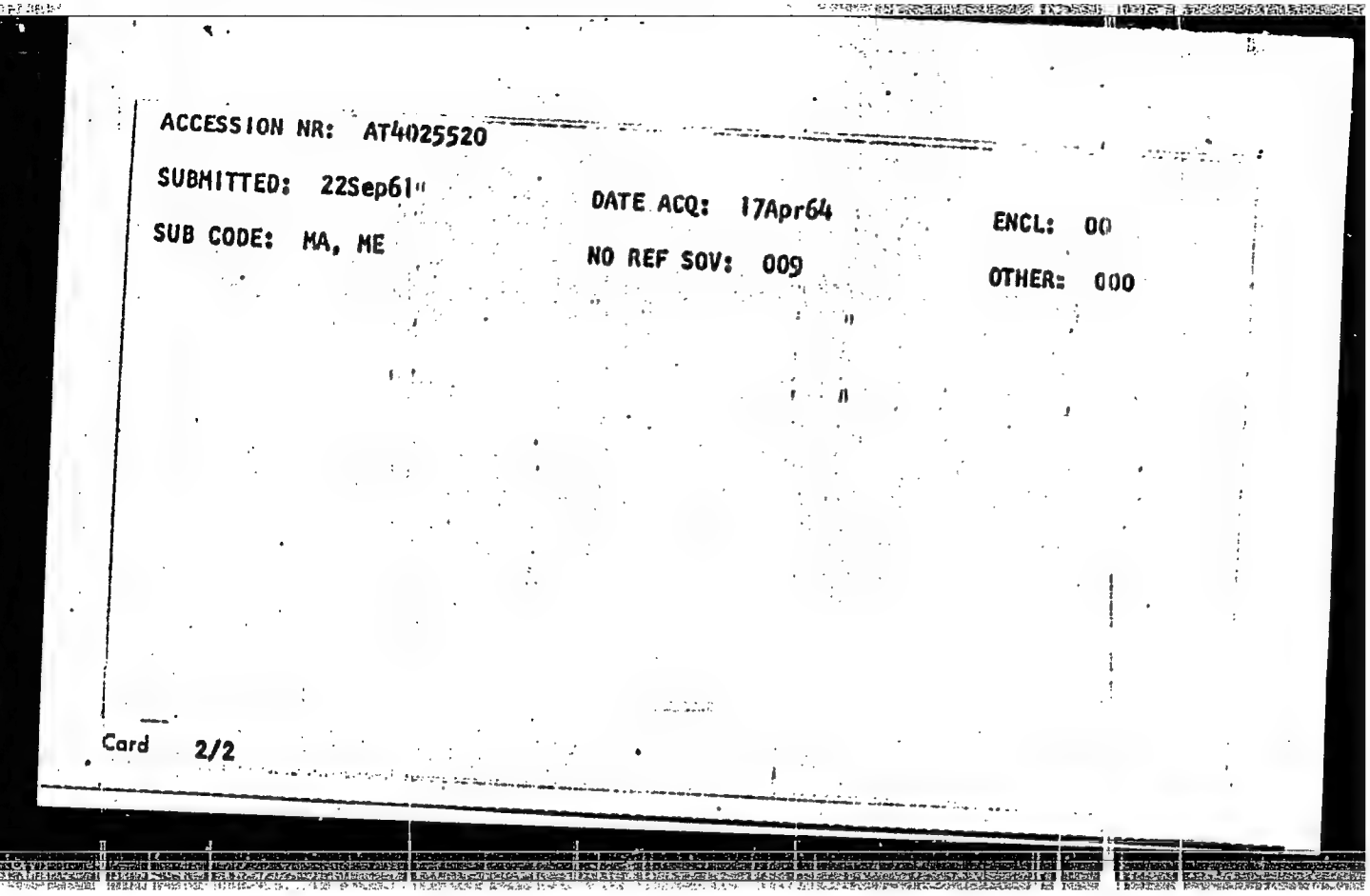
SOURCE: Kazan. Aviatsionnyy institut. Trudy*, no. 68, 1962. Matematika i mekhanika (Mathematics and mechanics), 3-10

TOPIC TAGS: Lyapunov stability, Lyapunov theory, stability theory, motion stability, rotational motion, gyroscope, force field, rigid body

ABSTRACT: The unconditional Lyapunov stability of the uniform rotation around a vertical axis is investigated for a heavy gyroscope with a fixed bearing and with a center of inertia located on the axis of rotation. The mass of the gyroscope may be constant or may be variable. The gyroscope is located either in a parallel force field or in a Newtonian force field. These various cases are considered separately. Orig. art. has: 21 formulas.

ASSOCIATION: Aviatsionnyy institut, Kazan (Kazan Aviation Institute)

Card 1/2



ACCESSION NR: AT4025520

SUBMITTED: 22Sep61

DATE ACQ: 17Apr64

ENCL: 00

SUB CODE: MA, ME

NO REF SOV: 009

OTHER: 000

Card 2/2

42740

S/124/62/000/011/002/017
D234/D308

24.4100

AUTHOR: Vovchenko, I. I.

TITLE: Stability of some cases of motion of bodies having variable mass with one fixed point

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1962, 14, abstract 11A100 (Tr. Kazansk. aviats. in-ta, 1960, no. 61, 29-46)

TEXT: The author considers a heavy body whose mass varies according to a determined law, rotating about a fixed point. It is assumed that the body is subject to moments of gravitational forces, of Meshcherskiy's forces, of inertial forces of ejected mass particles and of Coriolis forces of these particles. Conditions of stability of motion of the body are sought. In solving the problem, only the moment of gravitational forces is taken into account and other moments are assumed to be equal to zero. The problem is solved by Lyapunov's second method. Lyapunov's function is a bundle of first integrals of the limiting system of equations obtained from the

Card 1/2

initial system by assuming the mass of the body to be constant. The author considers the cases when the center of inertia of the body coincides or does not coincide with the fixed point. In the second part of the paper the same problem is considered assuming that the body is in a Newton's force field. [Abstracter's note: Complete translation.]

Card 2/2

S/124/63/000/002/001/052
D234/D308

AUTHOR: Vovchenko, I.I.

TITLE: Stability of some cases of motion of solid bodies with one fixed point in a finite time interval

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 2, 1963, 11, abstract 2A82 (Tr. Kazansk. aviats. in-ta. no. 68, 1962, 3-10)

TEXT: The author studies the stability of some heavy gyroscopes of constant and variable mass, rotating uniformly about a vertical axis, in a finite time interval; also of gyroscopes in a Newtonian force field. With the aid of V functions of a special kind he obtained sufficient conditions of stability in certain time intervals.
[Abstracter's note: Complete translation]

Card 1/1

VOVCHENKO, I.T.

Results of water resources development in 1962 and forthcoming tasks. Gidr. i mel. 14:3-9 Ja '63. (MIRA 16:2)
(Water resources development)

VOVCHENKO, I.T.

For effective use of funds in irrigation construction.
Gidr. i mel. 17 no.7:1-5 Jl '65. (MIRA 18:12)

1. Gosplan SSSR.

30(1) SOV/99-59-2-2/12

AUTHOR: Vovchenko, I.T.

TITLE: Water Economy Construction During the Seven-Year Period 1959 - 1965 (Vodokhozyaystvennoye stroitel'stvo v semiletii 1959 - 1965 gg.)

PERIODICAL: Gidrotekhnika i melioratsiya, 1959, Nr 2, pp 7-13 (USSR)

ABSTRACT: The article gives data on irrigation and drainage projects to be completed in the USSR by 1965. By that time, Soviet agriculture is scheduled to produce 10 to 11 billion puds of grain and 5,7 to 6,100,000 tons of cotton (35-40% above the 1958 cotton figure). The estimate of the additional acreage to be created by 1965 follows: 1) 1,900,000 hectares of new arable land will be gained through irrigation; 2) 3,600,000 hectares will undergo irrigation; 3) some 78,000,000 hectares of pasture in the arid and nearly-arid areas will be watered. The breakdown: RSFSR-over 500,000

Card 1/3

hectares of new lands will be gained through irrigation, 5,000,000 hectares of pastures will be watered, and over 1,000,000 hectares will be drained; UkrSSR-200,000 hectares are to be drained and 150,000 hectares are to be irrigated; Belorussian SSR-over 600,000 hectares of swampy grounds are scheduled for draining in the Polesskiy and other districts; Uzbek SSR-600 to 700,000 hectares of arable land already in existance are to be ameliorated, 500,000 hectares of new lands are to be gained through irrigation, 5,000,000 hectares of pasture are to be watered, and the irrigation system of 250 to 300,000 hectares of sovkhoz lands is to be remodeled; Kazakh SSR-55,000,000 hectares of pasture are to be watered, the ameliorative state of some 120,000 hectares is to be improved, and some 200,000 hectares of new arable land is to be gained through irrigation; Georgian SSR-35,000 hectares of new arable land are to be gained through irrigation and 20,000 hectares through drainage; Azerbaydzhan SSR-185,000 hectares

are to be gained through irrigation and 670,000 hectares of pasture are to be watered; Lithuanian SSR-over 800,000 hectares of arable land will be gained through drainage; Moldavian SSR- 40,000 hectares of new arable land will be gained through irrigation; Latvian SSR-over 600,000 hectares are scheduled for drainage; Kirgiz SSR-900,000 hectares of pasture will be watered and 100 to 110,000 hectares of arable land will be gained through irrigation; Tadzhik SSR-150,000 hectares of arable land will be gained through irrigation and 1,500,000 hectares of pastures will be watered; Armenian SSR-37,000 hectares of arable land will be gained through irrigation; Turkmen SSR-155,000 hectares of new arable land will be gained through irrigation and 10,000,000 hectares of pasture will be watered; Estonian SSR-230,000 hectares of swampy grounds are to be drained.

VOVCHENKO, I.V.

Barley

Winter barley in Odessa Province. Sel. i sem., 19, No. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952 UNCLASSIFIED.

VOVCHENKO, Ivan Vsevolodovich, kand. sel'khoz. nauk, zasl. agronom USSR; LELYAKOVA, I., red.; MOLCHANOVA, T., tekhn. red.

[Winter wheat in the southern Ukraine] Ozimaia pshenitsa na iuge Ukrainy. Odessa, Odesskoe knizhnoe izd-vo, 1960. 234 p. (MIRA 15:7)

(Ukraine—Wheat)

VOVCHENKO, Ivan Vasyolodovich, kand. sel'khoz. nauk zasl. agronom URSR; VINNITSKIY, S.[Vinnyts'kyi, S.], red.; MOLCHANOVA, T., tekhn. red.

[More fertilizers, more corn] Bil'she dobryv - bil'she kukurudzy. Odesa, Odes'ke knyzhkove vyd-vo, 1959. 25 p. (MIRA 15:7)

1. Direktor Odesskoy gosudarstvennoy sel'skokhozyaystvennoy opytnoy stantsii (for Vovchenko).
(Ukraine—Corn (Maize))—Fertilizers and manures)

VOVCHENKO, Ivan Vsevolodovich, kand.sel'skokh.nauk; VERBIN, Ya.Ya. [Verbin, IA.IA.], prover. red.; POLOTAY, A.M. [Polotai, A.M.], red.

[Most important cultivation practices in growing winter wheat] Naivazhlyvishi agrotekhnichni pryiomy vyroshchuvannia ozymoi pshenytsi. Kyiv, 1958. 31 p. (Tovarystvo dlia poshyrenin politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.3, no.9) (Wheat) (MIRA 12:2)

BLAZHEVSKIY, Ye.V., dvazhdy Geroy Sotsialisticheskogo Truda; VOYCHENKO, I.V., kand. sel'khoz. nauk, zasl. agronom Ukr.SSR; VOROB'YEV, N.Ye., st. nauchn. sotr.; GESHELE, E.E., doktor biol. nauk, prof.; ZUBRITSKIY, A.A., agronom; KISEL'GOF, Z.S., inzh., zasl. mekhanizator sel'skogo khoz. Ukr.SSR; KLYUCHKO, P.F., kand. sel'khoz. nauk; KORCHAGIN, A.Ye.; LEBEDEV, Ye.M., st. nauchn. sotr.; NASYPAYKO, V.M., kand. sel'khoz.nauk; PIKUS, G.P., kand. sel'khoz.nauk; REKACH, V.N., doktor sel'khoz. nauk, prof.; SPIVAK, I.I., zootekhnik; TEMCHENKO, L.V., kand. sel'khoz. nauk; FEDULAYEV, A.A., agronom; YAKOVENKO, V.A., kand. tekhn.nauk; KITAYEV, I.A., kand. sel'khoz. nauk, red.; MUSIYKO, A.S., akademik, red.; VINNITSKIY, S.P., red.; MOLCHANOVA, T.N., tekhn. red.

[For high corn yields] Za bol'shuiu kukuruzu. [By] E.V. Blazhevskii i dr. Odessa, Odesskoe knizhnoe izd-vo, 196[illegible]. 173 p. (MIRA 16:7)

1. Zven'yevoy kolkhoza im. Gor'kogo Kotovskogo rayona na Odesshchine (for Blazhevskiy). 2. Glavnyy agronom sovkhoza "Bessarabskiy" (for Korchagin). 3. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk (for Musiyko).
(Ukraine--Corn (Maize))

VOVCHENKO, L. I.

Vovchenko, L. I.

"The network of mass libraries in the Ukrainian SSR in the postwar period (1945-1954). Problems of the location and planning of the network of mass libraries in rural localities." Moscow State Library Inst imeni V. M. Molotov. Moscow, 1956. (Dissertation for the Degree of Candidate in Pedagogical Science)

So: Knizhnaya letopis', No. 25, 1956

BUKHIN, V.Ye.; VOVCHENKO, L.I.; PERCHENOK, R.I.; PROFERANSOV, V.P.; KNAPP, K.K., red.; ALTUF'YEVA, A.M., red.izd-va; VOLKOV, S.V., tekhn.red.

[Gas equipment, apparatus, instruments, and fittings for an urban gas system; catalog] Gazovoe oborudovanie, apparatura, pribory, armatura dlia gorodskogo gazovogo khoziaistva; katalog. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 289 p. (MIRA 13:2)
(Gas appliances)
(Gas manufacture and works--Equipment and supplies)

VOVCHENKO, M.

Obtaining 101 centners of meat per 100 hectares. Nauka i pered. op. v sel'khoz. 18 no.2:16-17 F '58. (MIRA 11:3)
(Stock and stockbreeding)

VOVCHENKO, N.

Knigi po botanike. (Annotirovannyi spisok dlia uchashchikhsia 5-kh i 6-kh klassov.)
(Books on botany (An annotated list for students of the 5th and 6th grades)).
Moskva, Detgiz, 1952. 24 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 6, Sep. 1954

VOVCHENKO, M.A., inzhener.

Heating concrete with water condensate. Stroi.prom.33 no.9:6-7 S '55. (MLRA 9:1)
(Concrete)

VOVCHENKO, N.L.

Proposed planning for developing bases of the construction industry in the Tatar A.S.S.R. Prom.stroi. 37 no.12:4-6 D '59. (MIRA 13:4)

1. Zamesti el' predsedatelya Tatarskogo sovnarkhoza.
(Tatar A.S.S.R.--Building materials industry)

VOVCHENKO, N.L.

Tasks of pipeline installers in the sixth five-year plan. Stroi.pred. neft.prom.1 no.2:1-2 Ap '56. (MLRA 9:9)

1.Zamestitel' ministra stroitel'stva predpriyatii neftyanoy promyshlennosti.

(Petroleum--Pipelines)

VOVCHENKO, N.L.

Conditions for the industrialization of construction in petroleum and gas production in the Tatar A.S.S.R. and Bashkiria. Stroi. truboprov. 10 no.1:15-18 Ja '65. (MIRA 18:4)

1. Nachal'nik Glavnogo upravleniya kapital'nogo stroitel'stva Soveta narodnogo khozyaystva RSFSR.

VOVCHENKO, N.L.

Further specialization and cooperation in construction. Prom. stroi. 39 no.11:5-7 '61. (MIRA 14:12)

1. Glavnoye upravleniye kapital'nogo stroitel'stva Vserossiyskogo Soveta Narodnogo Khozyaystva.
(Construction industry--Production methods)

VOVCHENKO, N.L.

Shorten the construction period for industrial complexes. Prom. stroi. 39 no.7:2-4 '61. (MIRA 14:7)

1. Nachal'nik Glavnogo upravleniya kapital'nogo stroitel'stva Vserossiyskogo Soveta Narodnogo Khozyaystva.
(Construction industry)

VOVCHENKO, N.L.; RETYUNIN, P.A.

Using casing-head gas as a refrigerant. Neft.khoz. 38 no.5:49-52 My '60. (MIRA 13:8)

(Gas, Natural)
(Food industry)
(Refrigerators)

SOKOLOV, Georgiy Davydovich, inzh.; RETYUTIN, Pimen Andrianovich; VOYCHENKO, Nikolay Lavrent'yevich; ISAYEVA, V.V., vedushchiy red.; VORONOVA, V.V., tekhn. red.

[Setting up oil fields; from the practice of Tatar oil workers] Obustroistvo neftianykh promyslov; iz opyta neftianikov Tatarii. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 128 p. (MIRA 14:9)
(Tatar A.S.S.R.—Oil fields—Production methods)

VOVCHENKO, Nikolay Vasil'yevich, Geroy Sotsialisticheskogo Truda; MAKSIN, David Vladimirovich, agronom; KATSNEL'SON, S.M., red.; SAVCHENKO, Ye.V., tekhn.red.

[Seven-year plan of the collective farm in operation] Semiletnii plan kolkhoza v deistvii. Moskva, Izd-vo "Znanie," 1960. 39 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.5, Sel'skoe khoziaistvo, no.1). (MIRA 13:2)

1. Predsedatel' kolkhoza imeni Stalina Shirokovskogo rayona Dnepropetrovskoy oblasti (for Vovchenko).
(Shirokoye District--Agriculture)

VOVCHENKO, N.YA.
P.3-4

PHASE I BOOK EXPLOITATION SOV/3491
SOV/11-M-109

1(1)

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Aviatsionnoye priborostroyeniye i avtomatika; sbornik statey (Instrument Making and Automatic Systems in Aviation; Collection of Articles) Moscow, Oborongiz, 1959. 147 p. (Series: Its Trudy, vyp. 109) Errata slip inserted. 5,200 copies printed.

Sponsoring Agency: USSR, Ministerstvo vysshego obrazovaniya.

Ed.: B. A. Ryabov, Doctor of Technical Sciences, Professor; Ed. of Publishing House: N. A. Gortsuyeva; Tech. Ed.: L. A. Garnukhina; Managing Ed: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for scientific and technical personnel in the field of instrument making and automation, and for students of technical schools of higher education.

COVERAGE: The book is a collection of 10 articles describing certain aspects of aircraft automatic control and regulation and aviation instrument making. The

Card 1/ 5

Instrument Making and Automatic (Cont.)

articles consist of parts of the authors' dissertations or describe results of scientific research work of the Department of Aircraft Instruments and Automatic Systems of the Moscow Aviation Institute. References are given at the end of some articles.

TABLE OF CONTENTS:

Instrument Making and Automatic (Cont.) SOV/3491

Karagodin, V. M., Candidate of Technical Sciences. A Nonlinear Problem in the Vibration Theory 138

The author considers a mechanical system with one degree of freedom. He studies conservative systems with forces depending on coordinates and velocities. Selfoscillating systems and conservative systems with forces depending only on coordinates are not considered.

AVAILABLE: Library of Congress

Card 5/5

IC/fal
9-6-60

SOV/144-59-5-7/14

AUTHOR: Vovchenko, N.Ya., Candidate of Technical Sciences, Docent

TITLE: Compensation for the Temperature Error of Elastic Sensitive Elements in the Electrical Systems of Aircraft Servos

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 5, pp 53 - 58 (USSR)

ABSTRACT: With the increasing speed of modern aircraft the various elastic sensitive elements, such as aneroid pressure pick-ups which are used in control systems, encounter higher temperatures, reaching perhaps 150 - 200°C. This leads to temperature errors which amount typically to 10%. The existing methods of temperature compensation, based on the use of a bimetallic strip, are suitable only for temperatures of 50 - 70°C. It is now preferable to use electrical compensation in the bridge circuits associated with the pick-up. These bridges are usually of the self-balancing type, Figure 1, with the signal picked up as a

Card 1/2

Compensation for the Temperature Error of Elastic Sensitive Elements in the Electrical Systems of Aircraft Servos

voltage, Figure 2, or as a current, Figure 3. The basic compensated voltage-divider is shown in Figure 4. If the pressure characteristic of the aneroid is as derived in Ref 1, the compensation condition is given by Eq (8) and the value of the supplementary resistance is calculated from Eq (9). There is a practical advantage in separating out a fixed part of the voltage-divider resistance $R_{\Pi\Pi}$ and this is done in Eq (11). These expressions assume that the voltage-divider itself is free from error. If not Eq (12) must be used. The basic principles are equally applicable to capacitive and inductive pick-ups.
There are 4 figures and 1 Soviet reference.

ASSOCIATION: Moskovskiy aviatsionnyy institut (Moscow Aviation Institute)

SUBMITTED: March 28th, 1959.

BEASLAVSKIY, D.A.; VOVCHENKO, N.Ya.; YURKEVICH, A.P.; DENISOV, V.G.; RYABOV, B.A., prof., doktor tekhn.nauk, red.; GRIGORASH, K.I., izdat.red.; ORESHKINA, V.I., tekhn.red.

[Manual for designing aeronautical instruments] Posobie po proektirovaniiu aviatsionnykh priborov. Pod red. B.A.Riabova. Moskva, Gos.nauchno-tekhn.izd-vo Oborongiz. No.1. [Electromechanical instruments] Elektromekhanicheskie pribory. 196[illegible]. 94 p. (MIRA 13:7)

1. Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze. (Aeronautical instruments)

Vovchenko, N. Ya.

[illegible] SOV/[illegible]

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Voprosy rascheta aviatsionnykh priborov i sistem upravleniya; sbornik statey (Problems in the Design of Aviation Instruments and Control Systems; Collection of Articles) Moscow, Oborongiz, 1960. 157 p. (Series: Its: Trudy, vyp. 120). Errata slip inserted. 3,650 copies printed.

Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

Ed. (Title page): B. A. Ryabov, Doctor of Technical Sciences, Professor; Ed. (Inside book): V. M. Tokar'; Tech. Ed.: V. I. Orekhkin; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers and technicians working in the planning and design of devices and control systems and can also be used by students in the electromechanical departments of schools of higher technical education.

COVERAGE: The book consists of articles containing results achieved by the Department of Aeronautical Devices and Automatic Equipment of the Moscow Aviation Institute imeni Ordzhonikidze in the development of aeronautical devices and automatic equipment. The book covers the following: design of a transformer for an extremal regulator and telemetering systems, the problems of the dynamics of linear and nonlinear control systems, modeling, membrane origin, and the design of devices for measuring flying altitude and the revolutions of engines. No personalities are mentioned. References are found at the end of some articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

AC/ro/fal
9-22-60

Card 3/3

S/194/61/000/010/006/082
D256/D301

AUTHORS: Yurkevich, A.P. and Vovchenko, N.Ya.

TITLE: A magnetic-induction tachometer with adjustable sensitivity

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 10, 1961, 21, abstract 10 A168 (Tr. Mosk. aviats. in-ta, 1960, no. 120, 111-121)

TEXT: The sensing element of the tachometer consists of frames with currents induced by rotation in a magnetic field. the counter-balancing of the created torque by means of a spring providing the possibility of measuring the corresponding rate of rotation with a higher accuracy of readings at a given working range. 11 figures. [Abstracter's note: Complete translation]

Card 1/1

PHASE I BOOK EXPLOITATION SOV/5650

Yurkevich, A. P., and N. Ya. Vovchenko

Raschet elektricheskikh izmeritel'nykh ustroystv i sistem s silovoy kompensatsiyey (Calculation of Electrical Measuring Devices and Systems With Power Compensation) Moscow, Oborongiz, 1961. 128 p. 10,100 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy ordena Lenina aviatsionnyy institut imeni Sergo Ordzhonikidze.

Ed. (Title page): B.A. Ryabov, Doctor of Technical Sciences, Professor; Ed. of Publishing House: K. I. Grigorash; Tech. Ed.: V.I. Oreshkina; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended as a teaching aid for students working on term or degree projects in instrument-making and automation divisions of aviation schools of higher education. Certain sections of the book may be of interest to industrial technical personnel.

Card 1/4

Calculation of Electrical Measuring Devices (Cont.) SOV/5650

COVERAGE: The book discusses the computation of the static and dynamic characteristics of aviation instruments on the basis of their block diagrams. The designing of electrical measuring devices with conversion of current into moment and power and moment pickups used in electrical measuring systems with power compensation are considered. The necessary theoretical foundations of the formulas, examples of the sequence of operations in computing and designing instruments and pickups, and the structure of their basic units are given. No personalities are mentioned. There are 20 references, all Soviet.

TABLE OF CONTENTS:

Card 2/4

40844

S/535/62/000/147/010/010
1011/1211

AUTHOR: Vovchenko, N. Ya., Candidate of Technical Sciences

TITLE: On the elimination of temperature errors in measuring circuits with force compensation

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 147. 1962. Navigatsionnyy i giroskopichiskiye ustroystva. 108–116

TEXT: In existing systems with high forward gains the system errors are caused by the errors of the feedback elements. These elements, when they are of the magneto-electric force or torque transducer type, have their errors caused mainly by temperature changes, in the order of magnitude of 0.03% per 1°C. The relation between the output and input signals of the feedback path is expanded into a series with the retention of the first two members for the case of a linear temperature dependence of the parameters. It is then shown that there are two ways of eliminating the temperature errors: (1) the feedback path parameters are so chosen that their errors mutually compensate each other; (2) each of the temperature coefficients is decreased to its minimum possible value.

In the case of measuring circuits with force compensation there is usually one feedback section–the torque or force transducer Its errors are caused by temperature changes in the air-gap magnetic induction and the geometric measurements of the mechanical parts.

It is shown that mutual compensation of the errors is impossible because some of them are smaller by an order of magnitude than the others. Compensators are therefore added to the feedback section. They cause an additional temperature change that compensates the original one. Two types of compensators are described.

Card 1/2

The first one comprises a manganin (zero temperature coefficient) resistor in series with the transducer coil and a nickel (high positive temperature coefficient) resistor as a shunt to this series connection. This is therefore an electric compensator which suitably changes the current in the coil. An equation for the value of the shunt resistor as a function of the different temperature coefficients and the values of the other two resistors is derived.

The second one, the thermo-magnetic shunt, is based on the property of some magnetic materials of sharply changing their magnetic characteristics with changes in the temperature. This compensator suitably changes the air-gap magnetic induction. Some construction hints are given. These shunts are made of materials with low Curie points such as kalmalloy, thermalloy, iron-nickel-chrome and iron-nickel-silicon. In equivalent electric circuit is shown and an equation for the shunt magnetic resistance is derived. In the general case when the forward gain is not big enough the error is given by

$$\delta_s = k_s \left(\delta_I/\delta_{II} - \delta_{II}k_{II}\right),$$

where δ_s, δ_I, δ_{II} are the errors of the system, the forward and the feedback paths respectively; k_s, k_{II} are the gains of the system and the feedback respectively. There are 7 figures.

VOVCHENKO, N. Ya., inzh.

Structural analysis of static errors of power-compensated devices. Priborostroenie no. 10:11-12 O '65 (MIRA 19:1)

L 14947-66 EWT(d)/EWT(l)/EWT(m) BC/JD

ACC NR: AT5020336 SOURCE CODE: UR/2535/65/000/161/0076/0085

AUTHOR: Vovchenko, N. Ya. (Candidate of technical sciences)

42
B+1

ORG: Moscow Aviation Institute (Aviatsionnyy institut)

TITLE: Designing an inertial navigation system 9,44,55

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 161, 1965, Sistemy orientatsii i navedeniya letatel'nykh apparatov (Aircraft orientation and guidance systems); sbornik statey, 76-85

TOPIC TAGS: acceleration, inertial navigation, equipment, Coriolis force, gyrostabilized platform, space accelerometer

ABSTRACT: A geometric inertial navigation system (see fig. 1) with a gyrostabilized platform oriented in the horizontal plane is described. Equations of dynamics, introduced in an earlier work by V. A. Karakashev, are made more precise and an evaluation of the methodical errors arising from translational and Coriolis accelerations is presented. Numerical calculations indicate that these methodical errors are considerable but can be compensated for by the accurate measurement of the system

UDC: 629.13 : 527(04)

Card 1/3

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L 14947-66
ACC NR: AT5020336

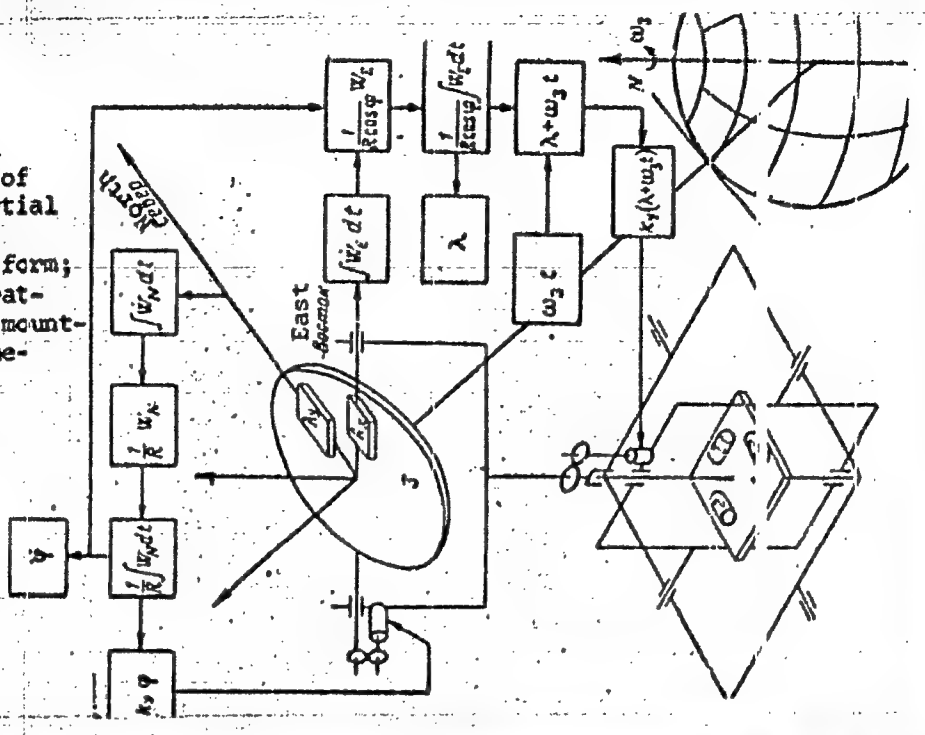

Fig. 1. Principal kinematic diagram of the geometric inertial navigation system: 1--gyroscopic platform; 2--floating integrating gyroscope; 3--mounting with accelerometers.

Card 2/3

L 14947-66
ACC NR: AT5020336

tem parameters. Deriving the differential equations of the system from its kinematic block diagram simplifies their solution and allows one to evaluate the influences of separate dynamic elements in more comprehensive investigations by means of control theory methods. Orig. art. has: 3 figures, 22 formulas.

SUB CODE: 17,22/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 000

Card 3/3

L 14946-66 EWT(d)/EWT(l)/EWT(m) BC/JD

ACC NR: AT5020340 SOURCE CODE: UR/2535/65/000/161/0120/0127

AUTHOR: Vovchenko, N. Ya. (Candidate of technical sciences)

ORG: Moscow Aviation institute (Aviatsionnyy institut)

TITLE: Characteristics of an integrating accelerometer with velocity feedback

SOURCE: Moscow. Aviatsionnyy institut. Trudy, no. 161, 1965. Sistemy orientatsii i navedeniya latatel'nykh apparatov (Aircraft orientation and guidance systems); sbornik statey, 120-127

TOPIC TAGS: accelerometer, differentiating circuit, inertial navigation equipment

ABSTRACT: An analysis is presented of an integrating accelerometer with derivitive feedback involving both the accelerometer and the integrator. The system is analyzed from the point of view of accuracy and to explain the dynamic behavior. Figures 1 and 2 show the two types of integrating accelerometers discussed. The transfer functions for the systems are derived, and expressions for error are presented for both the integrating pendulum and linear integrating accelerometers. The analysis shows that the use of the differentiating element in the feedback loop offers a pro-

UDC: 629.13.05.001.1(04)

Card 1/2

L 14946-66
ACC NR: AT5020340

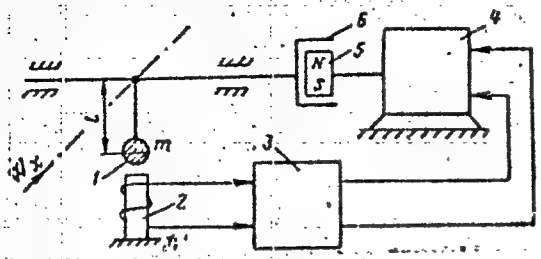

Fig. 1. Block diagram of the integrating pendulum accelerometer; L--inertial mass m; 2--output error sensor; 3--amplifier; 4--integrating motor; 5--dc magnet; 6--current conducting element.

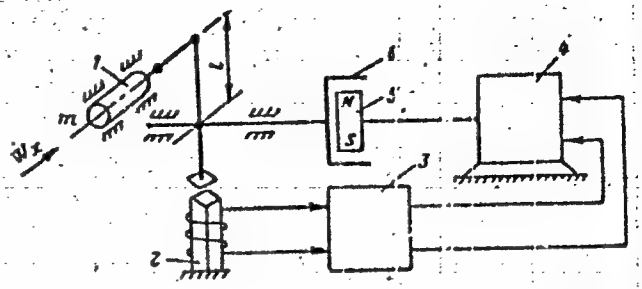

Fig. 2. Block diagram of the linear integrating accelerometer: 1--inertial mass m; 2--output error sensor; 3--amplifier; 4--integrating motor; 5--permanent magnet; 6--current conducting element.

mising method for increasing the accuracy of measuring velocity by an inertial method. Orig. art. has: 3 figures, 9 formulas.

SUB CODE: 01,17,09/ SUBM DATE: 00/ ORIG REF: 007/ OTH REF: 000

Card 2/2

VOVCHENKO, N.Ya., kand. tekhn. nauk

Designing an inertial navigation system. Trudy MAI no.161:76-85 '65.

Characteristics of an integrating accelerometer with a differentiating back coupling. Ibid.:120-127 (MIRA 18:9)

VOVCHENKO, O.D.; SHAPRAN, N.S.

New developments in the artistic design of fabrics. Leh. prom. no.2:53-55 Ap-Je '63. (MIRA 16:7)

1. Kiyevskiy shelkovyy kombinat.
(Kiev--Textile printing)

DIBROVA, Aleksey Timofeyevich [Dibrova, O.T.], kand.geograf.nauk; [illegible]OVCHENKO, P., red.; VER, A.Ya. [Ver, A.IA.], red.

[Nature and economy of the Ukraine] Pryroda i hospodarstvo Ukrainy'koi RSR. Kyiv, 1958. 54 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser.5, no.9)
(Ukraine--Economic conditions) (MIRA 12:3)

VCVCHENKO, Pavel Grigor'yevich; RUSAKOVA, G.Ya., red.

[Riddles of the atmospheric elements] Zagadki vozdushnoi stikhii. Leningrad, Gidrometeoizdat, 1964. 135 p. (MIRA 17:6)

IL'IN, K.P., kand.tekhn.nauk; PLADIS, F.A., inzh.; ROSTOVSKAYA, Ye.P., inzh.; VOVCHENKO, P.I., inzh.; Prinimali uchastiye: GORBENKO, L.G., inzh.; SHESTAKOV, Yu.K., inzh.; LABADIN, S.I., inzh., retsenzent; MALAKHOV, K.N., inzh., retsenzent; PETROVA, V.L., inzh., red.; BOBROVA, Ye.N., tekhn.red

[Methods of determining freight weight] Sposoby opredeleniia vesa gruzov. Moskva, Vses.izdatel'skopoligr.ob"edinenie M-va putei soob., 1961. 117 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.215) (MIRA 15:1)

(Railroads—Freight)
(Weighing machines)

VOVCHENKO, Pavel Grigor'yevich; ZUBKOV, Aleksandr Yemel'yanovich; POGOSYAN, Kh.P., prof., retsenzent; ZAMORSKIY, A.D., prof., retsenzent; PED', D.A., kand.geogr.nauk, retsenzent; DREMLYUG, V.V., kand.geogr.nauk, retsenzent; SAGATOVSKIY, N.V., red.; LAVRENOVA, N.B., tekhn.red.

[A brief course in meteorology and oceanography for ship navigators] Kratkii kurs meteorologii i okeanografii dlia sudovoditelei. Moskva, Izd-vo "Morskoi transport," 1960. 359 p. (MIRA 13:7)
(Meteorology, Maritime) (Oceanography)

VOVCHENKO, P.G.; PROTSENKO, V.F.

Organization of observations, collection of information, and study of dangerous hydrometeorological phenomena in the Northern Caucasus Hydrometeorological Service Administration. Meteor. i gidrol. no.3:44-45 Mr '65. (MIRA 18:2)

1. Severo-Kavkazskoye upravleniye gidrometeorologicheskoy sluzhby.

VOVCHENKO, P.I., inzh.; PLADIS, F.A., inzh.

Improvement of weighing operations and equipment is an urgent need. Zhel. dor. transp. 46 no.10:30-34 O '64. (MIRA 17:11)

VOVCHENKO, R L

Zagotovka i pererabotka produktov zhivotnovodstva (moloka, ptitsy i. yaits (preparation and processing of animal husbandry products (milk, fowl, eggs), by) R. L. Vovchenko i A. V. Trunov. Moskva, Koiz, 1954.

247 P. illus., diagrs., tables.

Bibliographical footnotes.

VOVCHENKO, V., inzh.

An 8 mm. sound motion picture projector. Radio no.2:46-48 F '63. (MIRA 16:2)

(Motion picture projectors)

VOVCHENKO, V.

Synchronous operation of a magnetic tape recorder and motion picture projector. Radio no.2:23-26,29 F '60.
(MIRA 13:5)

(Magnetic recorders and recording)
(Motion-picture projection)

VOVCHENKO, V.

Synchronizing techniques for motion-picture films.
Sov. foto 19 no.4:60-61 Ap '59. (MIRA 12:5)
(Motion pictures, Talking)

VOVCHENKO, V.

Film viewing table with a pulse lamp. Sov.foto 20 no.2: 39-40 F '60. (MIRA 13:7)
(Amateur motion pictures--Equipment and supplies)

VOVCHENKO, V.

Sound of an amateur motion-picture film. Sov.foto 19 no.3:64-68 Mr '59. (MIRA 12:4)

(Motion pictures, Talking)

Vovchenko, V. G.

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81123
P/045/60/019/02/10/013
B006/B011

AUTHORS: Halfer, Z., Kuznetsov, A. S., Meshcheryakov, M. G., Zielinski, V., Vovchenko, V. G.

TITLE: Energy Spectra of Charged Pions Produced in pd-Collisions at 660 Mev 19

PERIODICAL: Acta Physica Polonica, 1960, Vol. 19, No. 2, pp. 227-234

TEXT: In the present paper the authors describe the measurements of energy spectra of charged pions produced in pd- and pp-collisions, and discuss the results of these investigations with the aid of diagrams. By means of a magnetic spectrometer they determined the energy spectra of pions of the reactions $p+p+(n) \rightarrow \pi^{+} + p+n+(n)$, $p+n+(p) \rightarrow \pi^{+} + n+n+(p)$, $p+n+(p) \rightarrow \pi^{-} + p+p+(p)$, and $p+d \rightarrow \pi^{+} + {}^{3}H$, and for comparison, the energy spectrum of positive pions produced in free pp-collisions. From these comparisons one can derive conclusions as to the pion production process and the nature of nucleon bindings in the deuteron. Experiments were conducted with the 6-meter synchrocyclotron of the Joint Institute of Nuclear Research (Dubna); Fig. 1 shows the experimental arrangement. Figs. 2 and 3 show the

81123
Energy Spectra of Charged Pions Produced in pd-Collisions at 660 Mev
P/045/60/019/02/10/013
B006/B011

energy spectra. By integrating the spectra over the energy (in the center-of-mass system) the differential production cross sections were found to be $d\sigma/d\Omega(p+p \rightarrow \pi^{+} + \ldots) = (6.7 \pm 0.7)\cdot10^{-28}$ cm^2/steradian;

$d\sigma/d\Omega(p+d \rightarrow \pi^{+} + \ldots) = (5.9 \pm 0.6)\cdot10^{-28}$ cm^2/steradian;

$d\sigma/d\Omega(p+d \rightarrow \pi^{-} + \ldots) = (0.57 \pm 0.08)\cdot10^{-28}$ cm^2/steradian. The differential cross section for positive pion production in free pp-collisions at 660 Mev (90° in the c.m.s.) is close to the value

$(6.8 \pm 1.5)\cdot10^{-28}$ cm^2/steradian obtained by B. S. Neganov and O. V. Savchenko, but is smaller than the value obtained by A. Meshkovsky. The ratio of probabilities of positive meson production in collisions of protons with free and bound protons is equal to

81123
Energy Spectra of Charged Pions Produced in pd-Collisions at 660 Mev
P/045/60/019/02/10/013
B006/B011

$$\frac{\frac{d\sigma}{d\Omega}(p+p \rightarrow \pi^{+} + \ldots)_D}{\frac{d\sigma}{d\Omega}(p+p \rightarrow \pi^{+} + \ldots)_H} = 0.73 \pm 0.08.$$

Generally speaking, this ratio can differ from unity only if the interference between amplitudes of possible meson-nucleon states is different. It follows from the data obtained that at 90° in the c.m.s. the ratio of the number of positive pions to that of negative pions from deuterium is equal to 10.3 ± 1.3. Prokoshkin is mentioned. The investigation under review was submitted in a lecture before the 6th Session of the Scientific Council of the Joint Institute of Nuclear Research on June 1, 1959. There are 3 figures, 1 table, and 10 references: 5 Soviet, 2 American, and 2 British.

ASSOCIATION: Joint Institute of Nuclear Research, Dubna

Card 3/3

VOVCHENKO, V.G.; GEL'FER, G.; KUZNETSOV, A.S.; MESHCHERYAKOV, M.G.; SVYATKOVSKIY, V.

Effect of the nuclear coupling of nucleons on the shape of the π-meson energy spectra. Zhur. eksp. i teor. fiz. 39 no. 6:1557-1570 D '60. (MIRA 14:1)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons) (Nucleons)

ACC NR: AP6022012 SOURCE CODE: UR/0120/66/000/003/0141/0142

AUTHOR: Vovchenko, V. G.; Shchetkovskiy, A. I.

ORG: Physics Engineering Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy instutut AN SSSR)

TITLE: Discriminator as a nanosecond pulse splitter

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1966, 141-142

TOPIC TAGS: pulse counter, logic circuit, printed circuit

ABSTRACT: A discriminator (nanosecond pulse splitter) circuit, intended for use in time analysis systems, has been developed which is capable of operation in a wide amplitude range of input signals. The circuit consists of a diode limiter, a tunnel diode acting as a shaper, and a 5-transistor pulse splitter. Input and output pulses are of negative polarity. The circuit is printed in a single block as a component in a system of counting modules. Its operating threshold is 100 mv and duration of its output pulses is 6-8 nsec. It permits a two hundred-fold excess of the threshold- i.e., it can handle input pulses of up to 20 v with a 3-20 nsec duration, whereby the duration of output pulses remains practically constant. The dead time of circuit is 20 nsec. The authors thank L. V. Fokina and V. D. Malakhov for aid in the assembly and adjustment of the circuits as well as S. P. Kruglov for interest in the work. Orig. art. has: 3 figures.

SUB CODE: 09/ SUBM DATE: 20Apr65/ ORIG REF: 001/ OTH REF: 001

UDC: 621.374.2

Card 1/1

VOVCHENKO, V.G.

Determining the imaginary part of phase shifts in elastic pp-scattering at 655 Mev. Dokl. AN SSSR 163 no.6:1348-1351 Ag '65. (MIRA 18:8)

1. Fiziko-tekhnicheskiy institut im. A.F.Ioffe AN SSSR. Submitted May 8, 1965.

88428

S/056/60/039/006/015/063
B006/B056

24.6900

AUTHORS: Vovchenko, V. G., Gel'fer, G., Kuznetsov, A. S., Meshcheryakov, M. G., Svyatkovskiy, V.

TITLE: Effect of Nuclear Binding of Nucleons Upon the Shape of Pion Energy Spectra

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1557-1570

TEXT: A description is given of experiments which were carried out with the aim of obtaining quantitative data on the effect produced by nucleon bindings in deuterons and carbon nuclei upon the production of charged pions. Conclusions are drawn with respect to pion production processes on the basis of comparisons of the energy spectra of pions produced in collisions of protons with free protons and with nucleons bound in deuterons and carbon nuclei. The experiments were conducted in a way ensuring strictly equal conditions in taking the spectra and separating the pp- and pn-collisions. The experiments were carried out on the six-meter synchrocyclotron of the Joint Institute of Nuclear

Card 1/6

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Effect of Nuclear Binding of Nucleons Upon the Shape of Pion Energy Spectra

Research. For the pp- and pd-collision experiments, thin-walled cylindrical vessels (4 cm × 12 cm) filled with liquid hydrogen and deuterium, respectively, were used as targets. The densities were 0.0708 and 0.169 g/cm^3, respectively. In the experiments with carbon a 3 mm thick, 5 × 5 cm^2 graphite plate was used as target. In the target center, the proton energy in all cases was (654±5)Mev, the slowing-down losses in hydrogen and deuterium, respectively, were 1.4 and 1.7 Mev, and in carbon they were 1.9 Mev; the slowing-down losses of the 150-Mev pions were 0.7, 0.8, and 0.5 Mev, respectively. The proton flux in a beam of 2 × 3 cm^2 cross section was $2 \cdot 10^8$ p/cm^2·sec. The energy spectra of the charged pions were measured by a magnetic spectrometer with two thin scintillation counters at the input, which was described by L. S. Azhgirey et al. The pion recording threshold was about 35 Mev. The results obtained had, after a number of corrections, which had an error of 7% for the differential cross sections $d^2\sigma/d\omega dE$. The differential elastic pp scattering cross sections at 654 Mev and for 56° in the laboratory system (l.s.) were taken to be $(6.7 \pm 0.35) \cdot 10^{-27}$ cm^2/steradian, so that for 120° in c.m.s. the value $(3.41 \pm 0.13) \cdot 10^{-27}$ cm^2/steradian was obtained. The

Card 2/ 6

Effect of Nuclear Binding of Nucleons Upon the Shape of Pion Energy Spectra

S/056/60/039/006/015/063
B006/B056

difference found to exist in the spectra of mesons from deuterium and carbon is said to be due to the following reasons: a) a higher degree of pair correlation of the nucleons in the carbon nuclei than in deuterons, b) differences in nucleon momentum distribution in these nuclei, and c) effect of secondary pion-nucleon interactions in carbon nuclei. For an angle of $\sim 90^{\circ}$ in the c.m.s. of the two colliding nucleons, the following ratio of differential cross sections was found:

$$\frac{d\sigma}{d\omega}\left[p + p \rightarrow \pi^{+}\right]_{H} : \frac{d\sigma}{d\omega}\left[p + p \rightarrow \pi^{+}\right]_{D} : \frac{d\sigma}{d\omega}\left[p + p \rightarrow \pi^{+}\right]_{C} = 1:0.79:0.40.$$

The π^{-}-meson yields from deuterium and carbon per nucleon of the target nucleus were found to be approximately the same. The π^{+}-π^{-}-meson yield ratios for deuterium and carbon were found to be 10.3 ± 1.3 and 6.0 ± 0.8. The decrease of this ratio on the transition from deuterium to carbon is explained by the considerable fraction of secondary exchange interaction ($\pi^{0} + n \rightarrow \pi^{-} + p$) in the π^{-}-meson yield of carbon. B. S. Neganov, O. V. Savchenko, A. G. Meshkovskiy, Yu. D. Prokoshkin, L. B. Parfenov, and M. S. Kozodayev are mentioned. There are 4 figures,

Card 3/6

68428

Effect of Nuclear Binding of Nucleons Upon the Shape of Pion Energy Spectra

S/056/60/039/006/015/063
B006/B056

3 tables, and 31 references: 14 Soviet, 14 US, 1 CERN, and 2 British.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: July 9, 1960

Text to Fig. 4 : Comparison between the energy spectra of the charged pions 1) π^+-mesons, emitted in free pp collisions. 2) π^+ from $[pp]_D$; 3) π^+ from $[pp]_C$; 4) π^- from $[pn]_D$; 5) π^- from $[pn]_C$. All spectra are normalized on a uniform area.

Text to Table 1: Differential cross sections for charged pions in pp-, pd- and pC-collisions at 654 Mev. Angle of observation 56° with respect to the proton beam ($\sim 90^\circ$ in the c.m.s.). 1) Differential cross sections, in 10^{-28} cm^2/steradian; 2) Process; 3) Nucleons; 4) l.s.; 5) c.m.s.

Card 4/6

88428

S/056/60/039/006/015/063
B006/B056

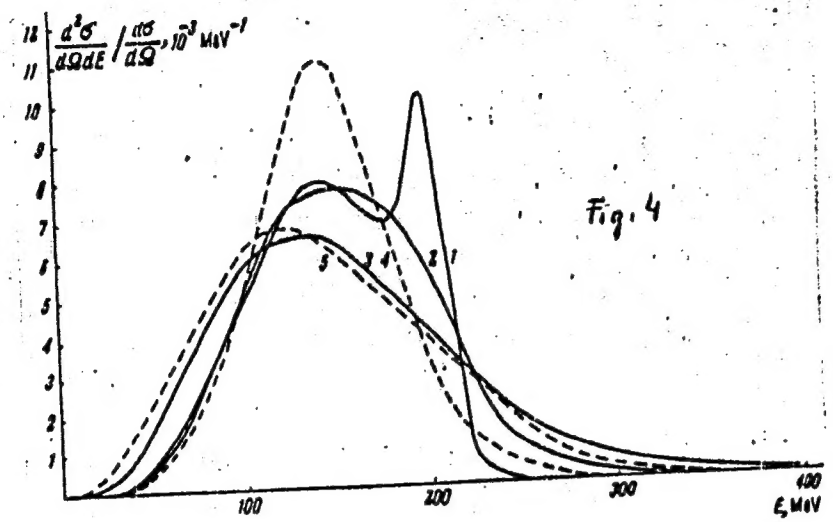

Fig. 4

Card 5/6

88428
S/056/60/039/006/015/063
B 006/B056

Процесс 2	1 Дифференциальные сечения, 10^{-30} см²/стерад			
	$\frac{d\sigma^+}{d\omega}$, 56° (л.с) 4	$\frac{d\sigma^-}{d\omega}$, 56° (л.с) 4	$\frac{d\sigma^+}{d\omega}$, ~90° (с.ц.м.) 5	$\frac{d\sigma^-}{d\omega}$, ~90° (с.ц.м.) 5
$p+p \rightarrow \pi^+ +$ нуклоны 3	10,2±1,0	—	6,7±0,7	—
$p+d \rightarrow \pi^+ +$ нуклоны 3	9,1±0,9	0,88±0,12	5,9±0,6	0,57±0,06
$p+C \rightarrow \pi^+ +$ нуклоны 3	30,2±3,0	5,0±0,8	19,5±1,9	3,2 ±0,5

Tab. 1

Card 6/6

VOVCHENKO, V.I.

Aerosynoptic conditions of the bumpiness of a helicopter on the Simferopol'-Yalta route. Trudy CGO no.171:104-109 '65. (MIRA 18:9)

1. Meteorologicheskaya stantsiya Simferopol'.